Part 141 Summit

Federal Aviation Administration

Training Device Types, Use and Credit.

Presented to: Summit Participants

By: Steve Moore, Aviation Safety Inspector

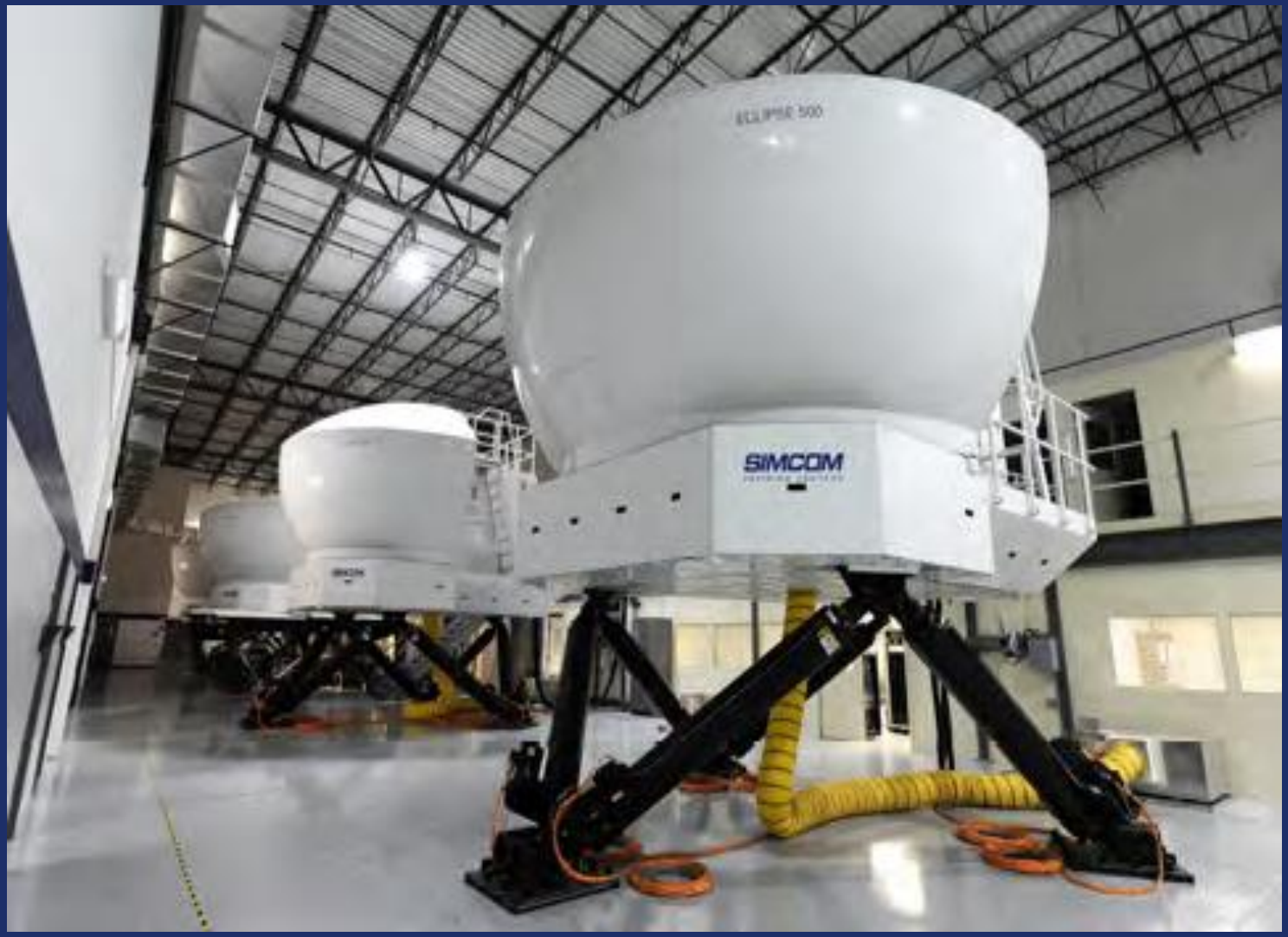
Date: February 2015

FSTD

Flight Simulation Training Devices (FSTD) are Full Flight Simulator (FFS) or Flight Training Devices (FTD)

- **FFS – Levels A through D.**
- **FTD – Levels 4 through 7.**
- **Must have an approved Qualification Test Guide (QTG).**
- **Evaluated Annually by NSP (ASO-205).**
- **Statement of Qualification (SOQ). Valid for 12 months.**
- **Training Approved by the TPAA.**
- **14 CFR Part 60**

FFS – Full Flight Simulator



FSTD

- **Grandfathering allowed.**
- **Former approvals for FSTDs are permitted.**

- **Guidance doc. for FFS - AC121-14 (1969-1976), AC121-14A (1976-1978), AC121-14B (1978-1980), AC121-14C (1980-1983), AC120-40 (1983-1986), AC120-40A (1986-1991), 14 CFR 121 Appendix H, (1991-1996), AC120-40C Draft (1996-2008), 14 CFR 60 (2008-Present).**
- **Guidance doc. for FTD AC120-45 (1987-1992), AC120-45A (1992-2008), 14 CFR 60 (2008-Present).**

FFS

Level A

Static Control Loading.

Three Axis - Pitch, Roll and Yaw.

Night Scene.

45 Degrees X 30 Degrees field of view.

Some cockpit noise.

FFS

Level B

Static Control Loading.

Three Axis - Pitch, Roll and Yaw.

Night Scene.

45 Degrees X 30 Degrees field of view.

Some cockpit noise.

Ground Handling Packet.

FFS

Level C

Static and Dynamic control loading.

Six Axis-Pitch, Roll, Yaw, Heave, Surge, Sway

Day, Dusk, and Night Scenes.

180 Degrees X 40 Degrees field of view.

Significant Cockpit Noise.

Ground Handling Package.

Feel and See some Runway Contaminates.

FFS

Level D

Static and Dynamic control loading.

Six Axis-Pitch, Roll, Yaw, Heave, Surge, Sway

Day, Dusk, and Night Scenes.

180 Degrees X 40 Degrees field of view.

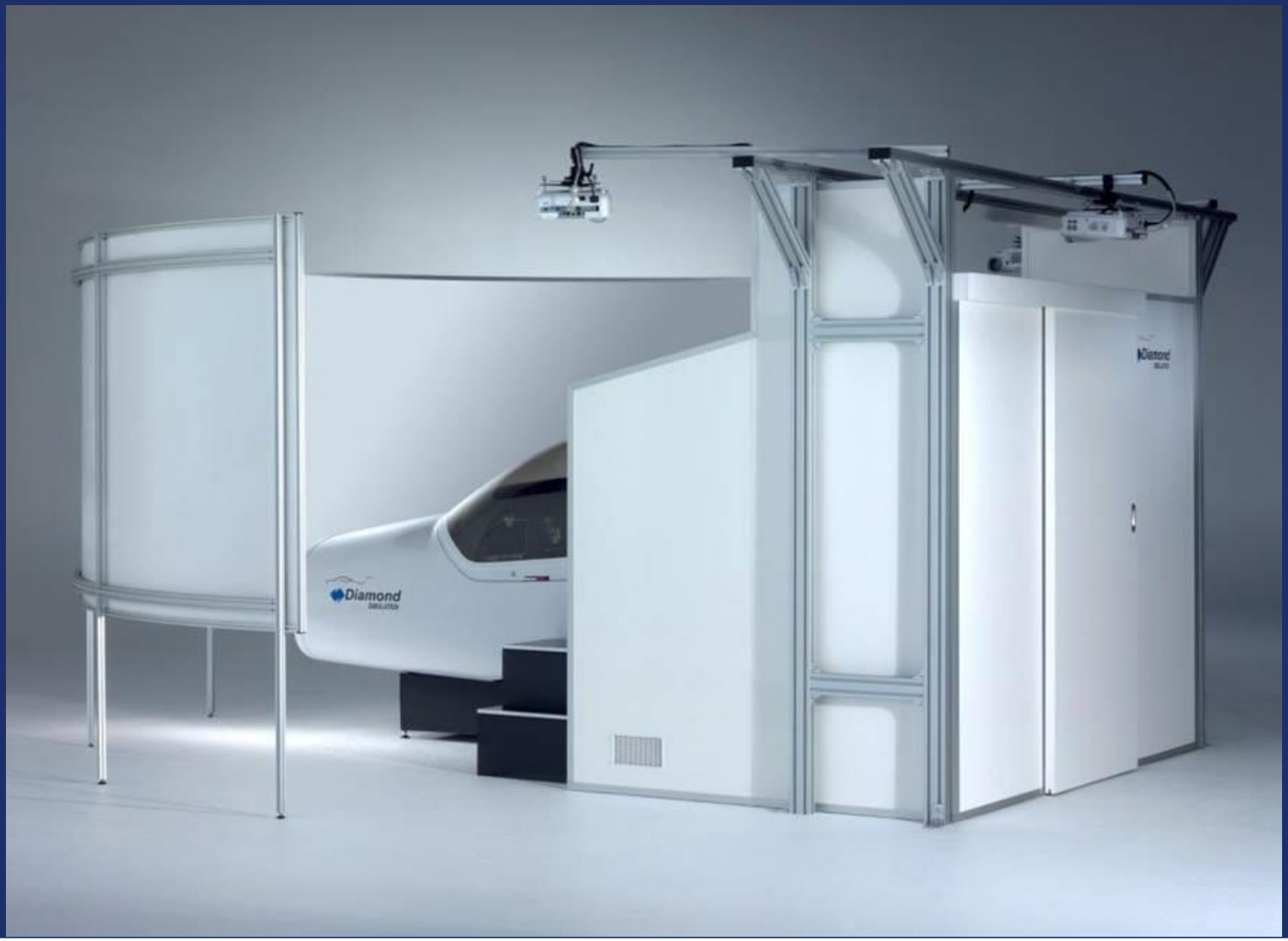
Realistic Cockpit Noise.

Ground Handling Package.

Feel and See Runway Contaminates.

Operating Weather Radar.

FTD- Flight Training Device



FTD

Level 4

Open or Enclosed Flight Deck Area.

Air and Ground Logic.

At Least One Operating System.

Displays maybe Flat, LCD, or Actual.

Controls, Switches, Knobs maybe touch screen or physical controls.

FTD

Level 5

Open or Enclosed Flight Deck Area.

Generic Aerodynamic Programming.

At Least One Operating System.

Displays maybe Flat, LCD, or Actual.

Controls, Switches, Knobs maybe touch screen.

Primary and secondary flight control must be physical controls.

FTD

Level 6

Enclosed Flight Deck Area.

Airplane Specific Aerodynamic Programming.

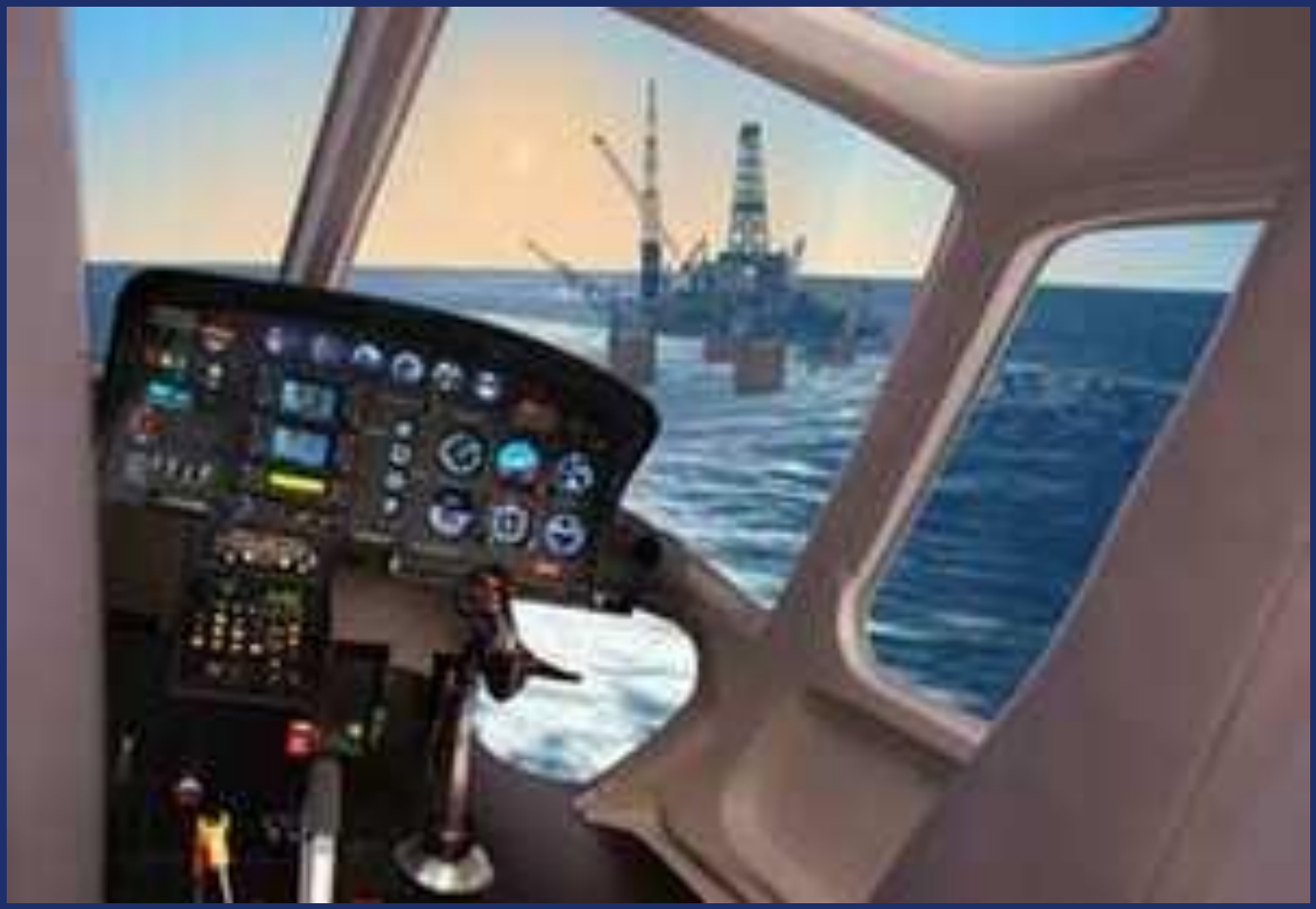
All applicable Operating Systems.

Control Loading.

All Controls, Switches, Knobs must be physical controls.

Significant Sound Representation.

•Level 7 Flight Training Device



FTD

Level 7

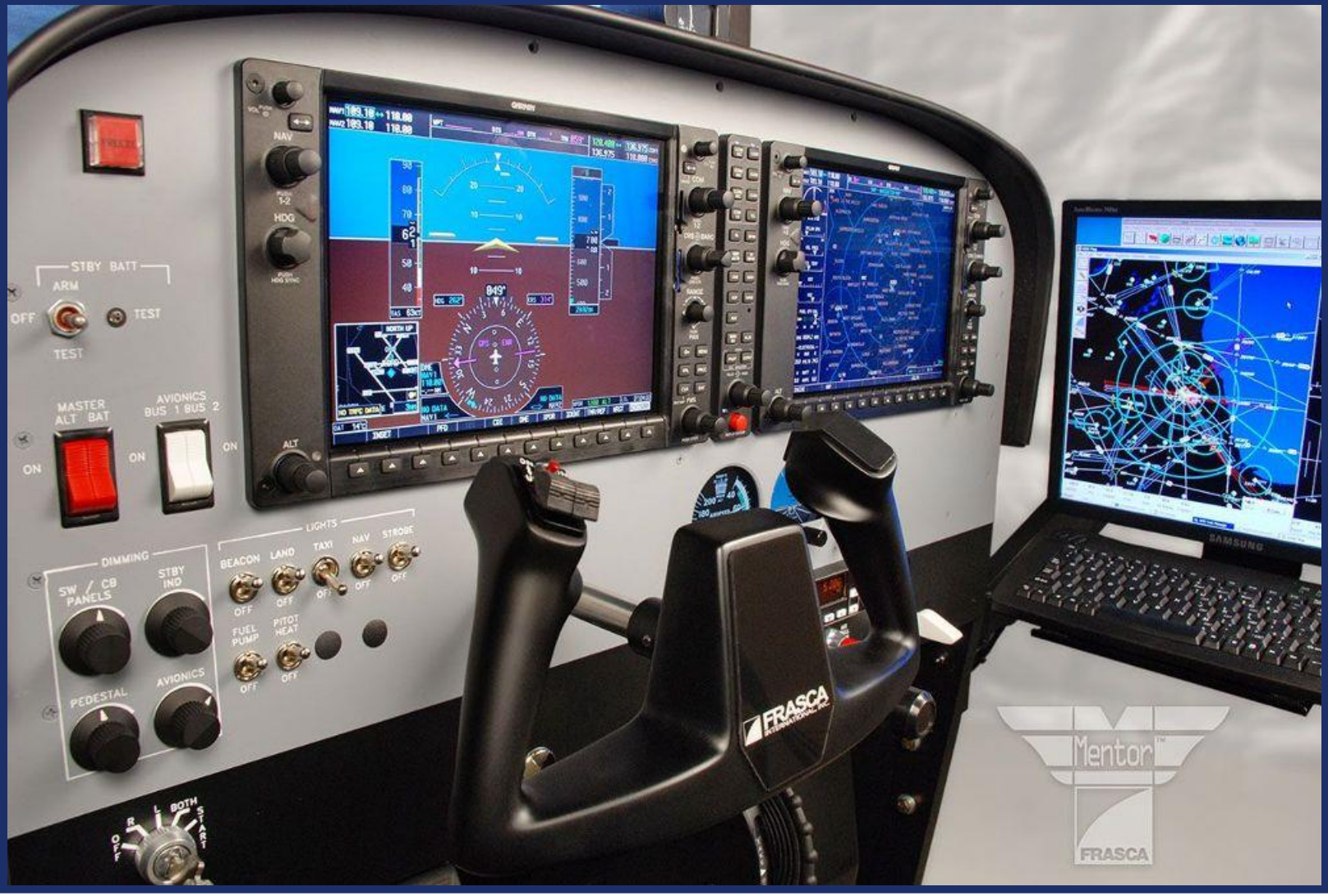
Helicopter Only!

Same as airplane level 6 except:

At least 146 degree horizontal and 36 degree vertical Visual systems.

Vibration cueing system as characterized by helicopter at pilot station.

ATD – Aviation Training Device



Aviation Training Device (ATD)

- Basic Aviation Training Device (BATD).
- Advanced Aviation Training Device (AATD).
- Approval granted by AFS-800.
- Must have an approved Qualification and Approval Guide (QAG).
- Letter of Authorization (LOA). Valid for 5 years. Has an expiration date.

Aviation Training Device (ATD)

LOA, QAG, and Performance Information must be available for student/instructor review.

No approvals or authorization are provided for aircraft type ratings using ATDs.

U.S. Department
of Transportation
Federal Aviation Administration

800 Independence Ave., SW
Washington DC 20591

FEB 05 2015

[redacted]

Dear Mr. [redacted]

The Federal Aviation Administration (FAA) last qualified and approved your airplane model Cessna Golden Eagle C-421C #SC C-421-001 training device as an FTD on September 15, 1998 and the model Golden Eagle C-421C #SC C-421-002 training device as an FTD on August 7, 2002.

In accordance with Title 14 Code of Federal Regulations (14 CFR) section (§) 61.4(c), review of the Qualification and Approval Guide dated December 14, 2014, and the FAA's previous approval for the [redacted] model Golden Eagle C-421C #SC C-421-001and Golden Eagle C-421C #SC C-421-002, these devices are authorized for use as an airplane AATD. The [redacted] model Golden Eagle C-421C is approved for use as prescribed for an AATD and authorized for use in satisfying the following sections of 14 CFR parts 61 and 141:

[redacted]

Multi-Engine Land
Advanced Aviation Training Device (AATD)

- § 61.51(b)(3) – Logbook entries;
- § 61.51 (h) – Logging training time;
- § 61.57(c) – Instrument experience;
- § 61.57(c)(4)(iii) – Instrument experience;
- § 61.57(c)(5)(ii) – Instrument experience;
- § 61.57(d)(1)(ii) – Instrument proficiency check, per the Instrument PTS;
- § 61.65(i) – Instrument rating;
- § 61.109(k)(1) – Private Pilot Certificate Aeronautical experience: up to 2.5 hours;
- § 61.129(i)(1)(i) – Commercial Pilot Certificate: up to 50 hours;
- § 61.159(a)(3)(i) – Airline Transport Pilot Certificate: up to 25 hours; and
- § 141.41(b) – Approved for use under the part 141 appendices as follows:

- *Appendix B* – Up to 15% towards the total Private Pilot flight training time requirements;
- *Appendix C* – As allowed under 4(b) toward the total instrument flight training time requirements;
- *Appendix D* – Up to 20% toward the total Commercial Pilot flight training time requirements;
- *Appendix E* – Up to 25% toward the total Airline Transport Pilot flight training time requirements;
- *Appendix F* – Up to 5% toward the total Flight Instructor flight training time requirements;
- *Appendix G* – Up to 5% toward the total Flight Instructor instrument flight training time requirements;
- *Appendix I, Private Pilot Airplane Multiengine Class Rating Course* – Up to 3 hours toward the flight training time requirements;
- *Appendix I, Commercial Pilot Airplane Multiengine Class Rating Course* – Up to 11 hours toward the required flight training time *requirements;*
- *Appendix I, Airline Transport Pilot Airplane Multiengine Class Rating Course* – Up to 6.25 hours toward the flight training time; and
- *Appendix M, Combined Private Pilot Certification and Instrument Rating* – Up to 25% toward the total flight training time requirements

Note: Training or experience requirements for cross country, night, solo, takeoffs and landings, or the 3 hours of training within 2 calendar months of the practical test must be accomplished in an aircraft. Private Pilot Airplane applicants must also complete the requirement for 3 hours of control and maneuvering of an airplane solely by reference to instruments specified in §61.109 in an airplane. Additionally, practical tests cannot be accomplished in an AATD.

This approval is contingent upon the following:

1) This aviation training device must continue to maintain its performance and function without degradation. The minimum instrument requirements specified under 14 CFR part 91, § 91.205 for day visual flights rules (VFR) and instrument flight rules (IFR) must be functional during the training session;

2) Only the configurations that are in the approved Qualification and Approval Guide are utilized during training;

3) A copy of this authorization and approval letter must be readily available in a location near the device when in use. Additionally, a copy of this authorization must be provided to the person using the above credits for pilot certification or ratings;

4) An authorized instructor must provide and certify the above instructional use;

5) Any changes or modifications to this aviation training device which have not been reviewed, evaluated, and approved by AFS-800 will terminate this letter of approval; and

6) The FAA reserves the right to revoke this authorization at any time if the Administrator determines that this training device is used contrary to FAA regulation, guidance, or safety.

This approval is valid for sixty (60) calendar months from the date of this letter. Any Renewal Letter of Authorization (LOA) requests should be made prior to the expiration (90 days in advance) by letter to AFS-800 and the above contingencies (1) through (6) remain valid.

Because this training device approval was based on an evaluation that occurred prior to publication of the current guidance for Aviation Training Device (ATD) approvals, AFS-800 may require a review of the QAG and an on-site evaluation before any subsequent approvals can be provided. At the time of application this training device will need to meet the requirements as described in the current publication of advisory circular AC 61-136 (FAA Approval of Aviation Training Devices and Their Use for Training and Experience) before a new LOA can be provided.

This authorization expires on 01/31/2020

The QAG is approved and a copy of this letter and approved materials are retained in our files.

Sincerely,

for James A. Viola
Manager, General Aviation and Commercial Division
Flight Standards Service

Enclosure

ATD

- **Guidance Document for ATDs is AC61-136A and FAA Order 8900.1 Volume 11, Chapter 10, Section 1.**
- **No Grandfathering.**
- **Former approvals for Ground Trainers, Level 1 through 3 FTDs, PCATDs, and ATD (not approved by AFS-800) without expiration dates are terminated.**

ATD

• BATD

- In accordance with AC61-136A, Appendix 2.
- Acceptable cockpit configuration and instrument panel design.
- Perform operational functions and maneuvers that closely mimic representative aircraft.

ATD

• AATD

- In accordance with AC61-136A, Appendix 3.
- Same as BATD with the addition of :
- Realistic cockpit, knobs, switches, and controls.
- GPS.
- Autopilot.
- Day/Night/VFR/IFR Visual System.
- Separate instruction station.
- No Motion and No Control Loading required.

Testing and Checking Credit

FFS and FTD:

- **In accordance with 14 CFR 61.64, testing and/or checking only under Part 141, 142, 121, or 135 approved training program is allowed.**
- **Use appropriate PTS appendix chart.**

ATD: No Testing or Checking allowed (exception IPC in an AATD in accordance with the Instrument PTS)

Appendix 1 FSTD Credit

Appendix 1: Flight Simulation Training Device Credit

Task vs. Flight Simulation Training Device (FSTD) Credit

Examiners conducting the instrument rating practical tests with Flight Simulation Training Devices (FSTDs) should consult appropriate documentation to ensure that the device has been approved for training, testing, or checking, and assigned the appropriate qualification level in accordance with the requirements of 14 CFR part 60.
The FAA must approve the device for training, testing, and checking the specific flight TASKS listed in this appendix.
The device must continue to support the level of student or applicant performance required by this practical test standard.
If an FSTD is used for the practical test, the instrument approach procedures conducted in that FSTD are limited to one precision and one nonprecision approach procedure.

Use of Chart

X	Creditable
A	Creditable if appropriate systems are installed and operating

Note: *Users of the following chart are cautioned that use of the chart alone is incomplete. The description and objective of each Task as listed in the body of the practical test standard, including all Notes, must also be incorporated for accurate FSTD use.*

"Postflight Procedures" means closing flight plans, checking for discrepancies and malfunctions, and noting them on a log or maintenance form.

Appendix 1 FSTD Credit

Flight Task	Flight Simulation Training Device (FSTD) Level							
Areas of Operation	4*	5*	6*	7*	A*	B*	C	D
II. Preflight Procedures								
C. Instrument Cockpit Check	A	A	X	X	X	X	X	X
III. Air Traffic Control Clearances and Procedures								
A. Air Traffic Control Clearances	A	A	X	X	X	X	X	X
B. Departure, En Route and Arrival Clearances	-	-	X	X	X	X	X	X
C. Holding Procedures	-	-	X	X	X	X	X	X
IV. Flight by Reference to Instruments								
A. Basic Instrument Flight Maneuvers	-	-	X	X	X	X	X	X
B. Recovery from Unusual Flight Attitudes	-	-	-	X	X	X	X	X
V. Navigation Systems								
A. Intercepting and Tracking Navigational Systems and DME ARCS	-	A	X	X	X	X	X	X
VI. Instrument Approach Procedures								
A. Nonprecision Approach (NPA)	-	-	X	X	X	X	X	X
B. Precision Approach (PA)	-	-	X	X	X	X	X	X
C. Missed Approach	-	-	X	X	X	X	X	X
D. Circling Approach	-	-	-	-	X	X	X	X
E. Landing from a Straight-in or Circling Approach	-	-	-	-	-	X	X	X
VII. Emergency Operations								
A. Loss of Communications	-	-	X	X	X	X	X	X
B. One Engine Inoperative during Straight-and-Level	-	-	X	X	X	X	X	X
C. One Engine Inoperative—Instrument Approach (Multiengine Airplane)	-	-	-	-	X	X	X	X
D. Loss of Gyro Attitude and/or Heading Indicators	-	-	X	X	X	X	X	X
VIII. Postflight Procedures								
A. Checking Instruments and Equipment	-	A	X	X	X	X	X	X

*Aircraft required for those items that cannot be checked using an FSTD

Training Credit

Part 61 Instrument Rating

FFS and FTD:

30 hours under Part 142 or 20 hours if not under Part 142 (14 CFR 61.65(h))

Authorized Instructor Required.

ATD:

Instrument Rating (14 CFR 61.65(i)) – 10 hours Maximum. Check LOA.

Authorized Instructor Required.

Training Credit

- **Part 141 Appendix C**

FFS:

No more than 50% of course requirement.

FTD:

No more than 40% of course requirement.

ATD:

No more than 10% of course requirement.

Authorized Instructor Required.

Training Credit

- **Commercial Certificate**

FFS or FTD:

Airplane 100 hours if under Part 142 or 50 hours if NOT under Part 142.

Helicopter 50 hours if under Part 142 or 25 hours if NOT under Part 142.

Authorized Instructor Required.

ATD:

Check LOA.

Training Credit

- **Part 141 Appendix D**

FFS:

No more than 30% of course requirement.

FTD:

No more than 20% of course requirement.

Combination:

No more than 30% of Course requirement.

ATD:

Check LOA.

Training Credit

- **ATP Certificate (Airplane)**

FFS or FTD:

Of the 75 hours of instrument, not more than 25 hours or 50 hours under Part 142.

Of the 1,500 hour not more than 100 hours if obtained training under Part 121, 135, 141, or 142.

ATD:

Check LOA.

Training Credit

- **ATP Certificate (Helicopter)**

FFS or FTD:

Of the 75 hours of instrument, not more than 25 hours or 50 hours under Part 142.

ATD:

Check LOA.

Training Credit

- **Part 141 Appendix E**

FFS:

No more than 50% of course requirement.

FTD:

No more than 25% of course requirement.

Combination:

No more than 50% of course requirement.

ATD:

Check LOA.

Logbook Entries

14 CFR 61.51:

Type and Identification of Device.

Description of the training given

The length of the training lesson.

The authorized instructor signature, certificate number, and certification expiration date.

Logbook Entries

Caution

Any logbook columns that reference flight time must remain blank when logging training in a ATD.

There is no restriction on the amount of training logged in the devices, just that amount of credit that maybe given toward certificates and ratings.

Appendix 2: IPC AATD Credit

Advanced Aviation Training Device Allowances for the Instrument Proficiency Check	
The following minimum tasks are required for the IPC and can be accomplished in an FAA approved Advanced Aviation Training Device (AATD). Certain tasks (*) must be accomplished in an aircraft or simulator as indicated below. The authorized instructor providing the IPC should select a comprehensive number of tasks that assure the pilot is competent to operate in the IFR environment. This includes developing a scenario that incorporates ADM and risk management skills during the IPC. This table does not limit additional tasks that may be accomplished to verify pilot competence when conducting IFR operations.	
Areas of Operation	
III.	C. – Holding Procedures
IV.	B. – Unusual Attitudes
V.	A. – Intercepting and Tracking Navigational Systems and DME Arcs
VI.	A. – Nonprecision Approach B. – Precision Approach C. – Missed Approach
*VI.	D. – Circling Approach (Airplane only) E. – Landing from a Straight-in or Circling Approach
Required for Multiengine Airplane only	
*VII.	B. – One Engine Inoperative During Straight-and-Level Flight C. – One Engine Inoperative-Instrument Approach
VII.	D. – Approach with Loss of Primary Flight Instrument Indicators
*These tasks must be accomplished in an Aircraft or Full Flight Simulator level B, C, or D. ***Note:*** *This table is not applicable to the practical test for the instrument rating.*	

ATD Credit History

- January 2, 2014 – Federal Register Policy Notice. Docket No. FAA-2013-0809.
- After January 1, 2015, all ATD must have an AFS-800 issued LOA with expiration date. No Grandfathering.
- ATD standards must be in accordance with AC61-136.
- LOA reflects current regulatory requirements.
- After January 1, 2015, all LOA's issued prior to August 23, 2013 will be terminated.
- Credit exemption expires on January 1, 2015.

ATD Credit History

- No change to rule for allowing training credit.
- No more than 10 hours maybe credited towards Instrument training under Part 61.
- No Part 141 course maybe approved for more than 10% towards Instrument training (unless approved under 141.55 (d) or (e)).

ATD Credit History

- December 3, 2014 – Proposed Direct Final Rule docket No. FAA-2014-0987 Amd 61.133.
- Effective January 20, 2015.
- Rule change to allow 20 hours credit under Part 61 and 40% under Part 141.
- View-limiting device not required.
- No adverse comments allowed. If adverse comments are received Direct Final Rule will be withdrawn.

ATD Credit History

- **January 15, 2015 - Direct Final Rule was withdrawn.**
- **FAA received adverse comments.**
- **Withdrawal does not preclude the FAA from issuing rulemaking in the future.**
- **All parties must follow the current rule for ATD credit.**

Use of an ATD

- 14 CFR 61.65(i)

- Device has an current LOA.
- Authorized instructor provides training.
- View-limiting device is to be worn when logging instrument time.
- FAA approved the instrument training and tasks performed in the device (see AC61.136A Appendix 4).

AC 61-136A Appendix 4

- A must read and should follow.
- Instructor should be trained on the use of the ATD.
- Use the Integrated Training Curriculum. First classroom followed by ATD procedural training and finally to the aircraft.
- Training requirements for pilot certification such as cross-country, night, solo, takeoff and landings can not be accomplished in the ATD.

QUESTIONS?